PROGRAM FOR ARTERIAL SYSTEM SYNCHRONIZATION (PASS) FY12/13 CYCLE

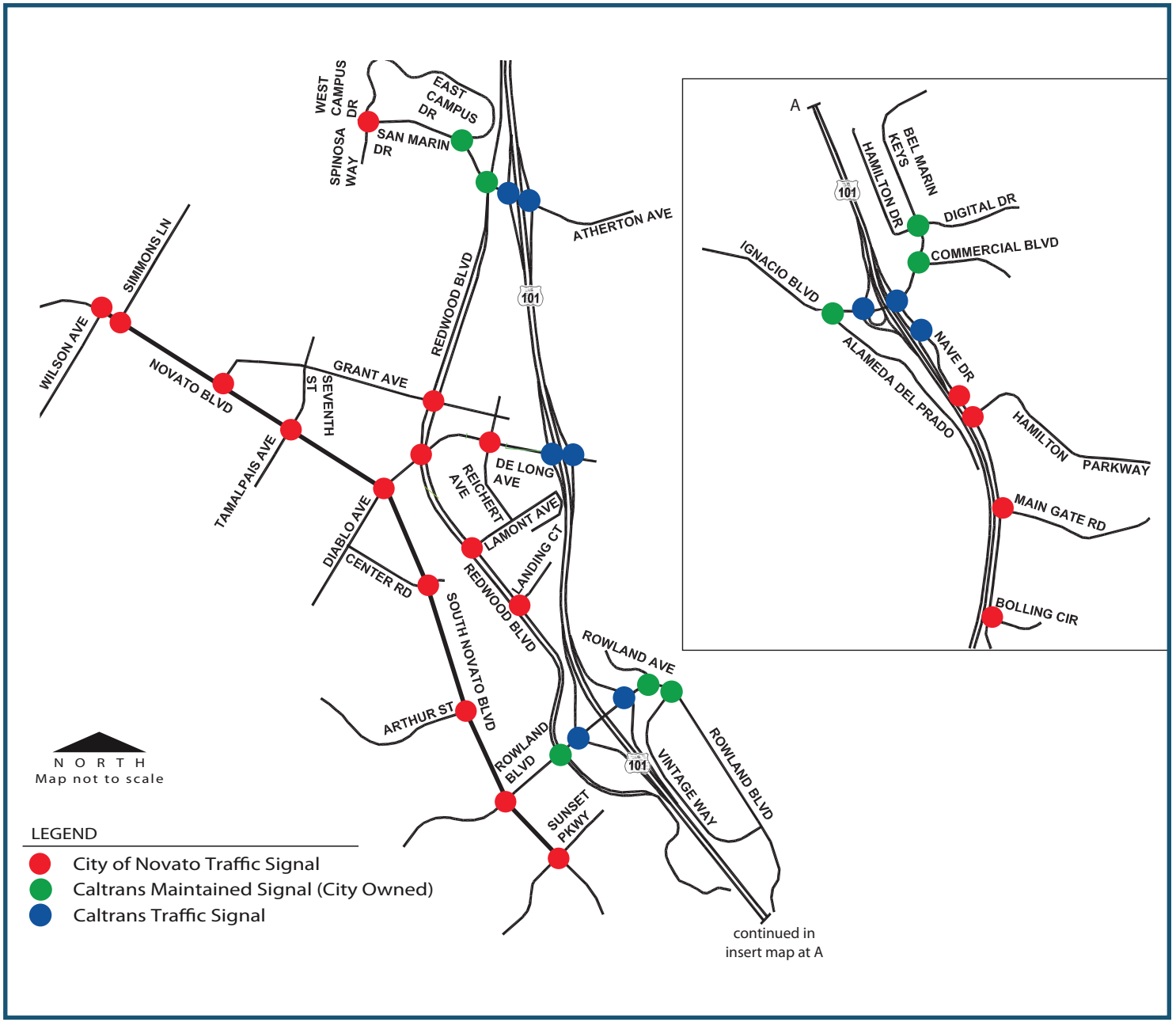
Novato Citywide Traffic Signal Timing Project

City of Novato | Caltrans | Metropolitan Transportation Commission

PROJECT OVERVIEW

The City of Novato received a grant from the Metropolitan Transportation Commission's Program for Arterial System Synchronization (PASS) to develop and implement optimized timing plans for weekday AM, midday, and PM peak periods for 36 signals citywide, and weekend AM and PM periods for five signals along Rowland Blvd. The corridors encompass all major arterials -- as shown in the adjacent map -- within the City of Novato: San Marin Dr, Diablo/De Long Ave, Rowland Blvd, Ignacio/Bel Marin Key Blvd, Redwood Blvd, Novato Blvd and Nave Dr.

These corridors serve as a vital link for regional transit services from Golden Gate Transit and Marin County Transit. This PASS project involved the completion of the following major tasks: 1) collecting traffic volumes and turning movement counts, including bike and pedestrian counts, at all project intersections; 2) analyzing this traffic data including collision data to develop optimized signal timing plans; 3) implementing and fine-tuning the plans in the field; and 4) conductinig travel time surveys to analyze the performance of the new timing plans, including any effects on transit travel time and speed.



THE CITY OF NOVATO CALIFORNIA

Caltrans

GPS Signal Communications

To provide a common time-source and enable communication between the City and Caltrans signals cost-effectively, GPS devices were installed at all 35 project intersections. These devices enable the signal controllers to regularly synchronize their clocks, efficiently deploy the timing plans at the same time, and thus help maintain the efficiency of signal coordination.

Benefits to Various Modes

Benefits to Bicyclists: For improved safety of bicyclists -- based on the new CA policy directives -- the minimum green time was increased at all project intersections to enable them to safely cross the intersection.

Benefits to Pedestrians: For improved safety, the pedestrian crossing timings were increased at all of the project intersections based on the current standards. Despite the increase in pedestrian timings, travel time savings for autos were achieved by efficiently allocating and maximizing the use of available time.

Benefits to Transit: To assess the impacts on transit, travel time runs on transit vehicles were conducted both before and after the new timings were implemented. These evaluation results, as shown in the table to the right, demonstrate that the project provides significant benefits to transit without any negative impacts on autos.

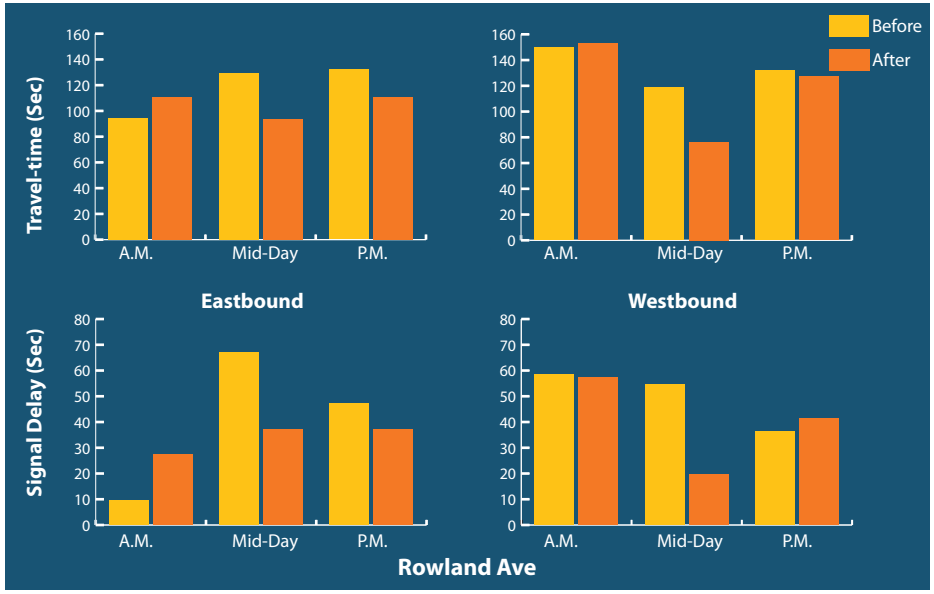
Project Costs	
Consultant Costs (Basic Services/Plans, Additional Plans, IM Flush Plans, etc.)	$124,800
Other Project Costs (Communications Equipment, etc.)	$18,000
Agency Staff Costs (Estimate)	$25,825
Total Costs	**$168,625**

Project Benefits

Measures	*Annual Average*		*Lifetime (5 Years)*	
	Savings	*Monetized Savings*	*Savings*	*Monetized Savings*
Travel Time Savings	36,786 hrs.	$702,166	183,932 hrs.	$3,510,832
Fuel Consumption Savings	116,257 gal.	$467,206	581,283 gal.	$2,336,030
ROG Emissions Reduction	0.70 tons	$876	3.48 tons	$4,382
NOx Emissions Reduction	0.78 tons	$13,989	3.89 tons	$69,943
PM10 Emissions Reduction	0.14 tons	$20,151	0.69 tons	$100,757
CO Emissions Reduction	5.56 tons	$430	27.79 tons	$2,148
			Total Lifetime Benefits	**$6,024,091**
Transit Travel Time Savings	1,104 hrs.	$21,077	5,521 hrs.	$105,387
			Total Lifetime Benefits with Transit	**$6,129,478**

Overall Project Benefits	*Auto*	*Transit*
Average Decrease in Travel Time	**16%**	**9%**
Average Speed Increase	**18%**	**12%**
Average Fuel Savings	**15%**	N/A
Average Reduction in Signal Delay	**31%**	N/A
Average Reduction in Number of Stops	**36%**	N/A

Overall Benefit-Cost Ratio **42:1**



Project Benefits Summary

Average Reduction in Auto Signal Delay: 31%

Average Reduction in Number of Stops: 36%

Auto Fuel Consumption Savings: 15% or 581,283 gallons

Total Emissions Reduced (ROG, Nox, PM10, CO): 35.85 tons

Auto Travel Time Savings: 16% or 183,932 hours

Overall Project Benefit-cost Ratio = 42:1

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